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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,450	12/04/2003	Andrew L. Adamiecki	Adamiecki 3-7	7130

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EXAMINER

PATHAK, SUDHANSHU C

ART UNIT	PAPER NUMBER
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2611

MAIL DATE	DELIVERY MODE
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02/19/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<p align="center"><b>Office Action Summary</b></p>	<p>Application No.</p> <p align="center">10/727,450</p>	<p>Applicant(s)</p> <p align="center">ADAMIECKI ET AL.</p>	
	<p>Examiner</p> <p align="center">Sudhanshu C. Pathak</p>	<p>Art Unit</p> <p align="center">2611</p>	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on December 4<sup>th</sup>, 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on December 4th, 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. Claims 1-29 are pending in the application.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 7-10, 15-16 (method) & 18-19, 21-24, 27 (system) & 29 (apparatus) are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant

Admitted Prior Art (AAPA) in view of Ginzburg et al. (5,408,500).

In regards to Claims 1, 15, 18 & 29, the AAPA discloses a method (system/apparatus) of processing data signals (Specification, Page 1, lines 9-28) comprising: transmitting the data signal through an electrical backplane (Specification, Page 1, lines 9-20) {Interpretation: The reference discloses transmitting data over multi-layer board called high-speed backplane}. However, the AAPA does not disclose receiving the data signal after being transmitted through the electrical backplane, wherein the received data signal is interpreted as a duobinary data signal.

Ginzburg discloses transmitting a duobinary modulated signal over electrical transmission lines and further receiving the duobinary signals from the transmission line (Abstract, lines 1-13 & Column 3, lines 20-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Ginzburg

teaches the received data signal is interpreted as a duobinary data signal and this is implemented as a method of transmission of data over an electrical backplane as described in the AAPA so as to be able to minimize the effects of electromagnetic interference and intersymbol interference on the data transmitted over unshielded transmission lines.

In regards to Claim 2, the AAPA in view of Ginzburg discloses a method (system) of processing data signals as described above. Ginzburg further discloses precoding a binary data signal, wherein the data signal transmitted through the electrical backplane is based on the precoded binary data signal (Fig. 1, element 10 & Fig. 2, element "Precoder"). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA in view of Ginzburg satisfies the limitations of the claim.

In regards to Claims 3-5, 7 & 19, the AAPA in view of Ginzburg discloses a method of processing data signals as described above. Ginzburg further discloses filtering the data signal prior to interpreting the data signal as the duobinary data signal wherein the filtering is implemented before transmission through the electrical backplane (Fig. 1, element 14 & Fig. 2, element 30) wherein the filtering comprises equalizing filtering (Fig. 5 & Fig. 3) {Interpretation: As per the instant application wherein the equalization filter reshapes the amplitude and phase of the signal prior to transmission, this function is performed by the filter (Fig. 1, element 14 & Fig. 3) of the reference}. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA in view of Ginzburg satisfies the

limitations of the claim. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention that implementing a low pass filter in digital domain is implemented using a FIR filter and this is implemented in the filter as described in Ginzburg so as to be able to implement a digital filter so as to be able to vary the parameters (filter characteristics) as desired by the user before the transmission of the data.

In regards to Claims 8-9 & 21-23, the AAPA in view of Ginzburg discloses a method (system) of processing data signals as described above. Ginzburg further discloses filtering delays a first copy of the data signal (Fig. 2, element 20); and adds the delayed first copy to a second copy of the data signal to generate the filtered data signal (Fig. 2, element 26). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA in view of Ginzburg satisfies the limitations of the claim. Furthermore, attenuation is inherent in any filtering process.

In regards to Claims 10 & 24, the AAPA in view of Ginzburg discloses a method (system) of processing data signals as described above. Ginzburg further discloses a duobinary-to-binary conversion applied to the received data signal (Column 3, lines 20-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA in view of Ginzburg satisfies the limitations of the claim.

In regards to Claims 16 & 27, the AAPA in view of Ginzburg discloses a method (system) of processing data signals as described above. Ginzburg further discloses

precoding a binary data signal, wherein the data signal transmitted through the electrical backplane is based on the precoded binary data signal (Fig. 1, element 10 & Fig. 2, element "Precoder"); filtering the data signal prior to interpreting the data signal as the duobinary data signal (Fig. 1, element 14 & Fig. 2, element 30); and applying duobinary-to-binary conversion to the received data signal to generate a binary data signal (Column 3, lines 20-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA in view of Ginzburg satisfies the limitations of the claim.

4. Claims 6 (method) & 20 (system) are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA) in view of Ginzburg et al. (5,408,500) and further in view of Humann (6,734,759).

In regards to Claims 6 & 20, the AAPA in view of Ginzburg discloses a method of processing data signals as described above. However, AAPA in view of Ginzburg does not disclose emphasize high-frequency components in the data signal and flatten group delay of the electrical backplane.

Humann discloses an equalization filter implemented between the digital signal source and a signal receiver for providing equalization caused by the transmission path (Column 1, lines 40-65) wherein the filter provides a high pass characteristic (Abstract, lines 1-9). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Humann teaches a high pass filter for equalization of the degradation caused by the transmission path and this is implemented in the method as described in the AAPA in view of Ginzburg so as to

be able to minimize the effects of channel degradation on the transmitted data thus increasing the reliability of the received data and further minimizing the complexity of the receiver. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the filter provide a flatten group delay so as to avoid increasing the intersymbol interference due to the filter.

5. Claim 11-14, 17 & 25-26 & 28 (system) are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA) in view of Ginzburg et al. (5,408,500) and further in view of Murray et al. (GB 2,217,957).

In regards to Claims 11-14, 17, 25-26 & 28, the AAPA in view of Ginzburg discloses a method (system) of processing data signals as described above. Ginzburg further discloses the data signal is an NRZ binary data (Column 2, lines 40-50). However, AAPA in view of Ginzburg does not disclose the D/B conversion comprises a splitter, comparing amplitude of the received data signal with first and second threshold voltages to generate first and second binary streams; and applying a logic function to the first and second binary streams to generate the binary data signal wherein the logic function comprises an exclusive-OR (XOR) or exclusive-NOR (XNOR) function.

Murray discloses a D/B conversion comprising a splitter (Fig. 1) {Interpretation: The reference in Fig. 1, shows splitting the received signal and inputting the split signal into a plurality of diodes}; comparing amplitude of the received data signal with first and second threshold voltages to generate first and second binary streams (Fig. 1, elements "CP1" & "CP2"); and applying a logic function to the first and

second binary streams to generate the binary data signal wherein the logic function comprises an exclusive-OR (XOR) or exclusive-NOR (XNOR) function (Fig. 1, element "G"). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Murray teaches D/B conversion comprises comparing amplitude of the received data signal with first and second threshold voltages to generate first and second binary streams; and applying a logic function to the first and second binary streams to generate the binary data signal wherein the logic function comprises an exclusive-OR (XOR) or exclusive-NOR (XNOR) function and this is implemented in the method as described in AAPA in view of Ginzburg so as to be able to decode the received duobinary signal.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is 571-272-5509. The examiner can normally be reached on 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on 571-272-3042.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to be "Patent" followed by a stylized flourish.